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December 10, 2007

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: John Kross, Queen Creek, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Monday, December 17, 2007 - 1:30 p.m.  
MAG Office, Suite 200 - Saguaro Room  
302 North 1<sup>st</sup> Avenue, Phoenix

Please park in the garage underneath the building. Bring your ticket to the meeting; parking will be validated. For those using transit, the Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Jason Stephens at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

Members of the MAG Air Quality Technical Advisory Committee may attend in person, via video conference or by telephone conference call. Those attending by video conference must notify the MAG site three business days prior to the meeting.

Please be advised that under procedures approved by the MAG Regional Council, all MAG committees need to have a quorum to conduct the meeting. A quorum is a simple majority of the membership. If you are unable to attend the meeting, please make arrangements for a proxy from your entity to represent you.

## TENTATIVE AGENDA

### COMMITTEE ACTION REQUESTED

1. Call to Order

2. Call to the Audience

An opportunity will be provided to members of the public to address the Air Quality Technical Advisory Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Air Quality Technical Advisory Committee requests an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard.

3. Approval of the November 19, 2007 Meeting Minutes

4. MAG 2007 Five Percent Plan for PM-10

The MAG 2007 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area is due to the Environmental Protection Agency by December 31, 2007. Collectively, the plan includes fifty-three committed control measures. The plan demonstrates that the committed measures will reduce PM-10 emissions by at least five percent per year and demonstrates attainment of the PM-10 standard as expeditiously as practicable which is 2010.

A public hearing will be conducted on the draft plan on December 12, 2007. The comments received on the plan will be discussed with the Committee. Following the consideration of public comments, the MAG Air Quality Technical Advisory Committee may make a

2. For information.

3. Review and approve the November 19, 2007 meeting minutes.

4. For information, discussion and recommendation to adopt the MAG 2007 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area.

recommendation on December 17, 2007. The MAG Regional Council may take action on the plan on December 19, 2007. Please refer to the enclosed material.

5. Tentative 2008 Meeting Schedule for the MAG Air Quality Technical Advisory Committee

For your information and convenience, the Tentative Meeting Schedule for the MAG Air Quality Technical Advisory Committee for January - December 2008 is provided. Please refer to the enclosed material.

6. Call for Future Agenda Items

The next meeting of the Committee has been tentatively scheduled for Thursday, January 24, 2008 at 1:30 p.m. The Chairman will invite the Committee members to suggest future agenda items.

5. For information and discussion.

6. For information and discussion.

MINUTES OF THE  
MARICOPA ASSOCIATION OF GOVERNMENTS  
AIR QUALITY TECHNICAL ADVISORY COMMITTEE MEETING

Monday, November 19, 2007

MAG Office  
Phoenix, Arizona

MEMBERS PRESENT

John Kross, Town of Queen Creek, Chairman,  
#Jess Segovia, Avondale  
Lucky Roberts, Buckeye  
#Jim Weiss, Chandler  
#Jamie McCullough, El Mirage  
#Lisa Taraborelli for Tami Ryall, Gilbert  
Doug Kukino, Glendale  
\*James Nichols, Goodyear  
#Scott Bouchie, Mesa  
Joe Gibbs for Gaye Knight, Phoenix  
Larry Person, Scottsdale  
#Antonio DeLaCruz, Surprise  
Oddvar Tveit, Tempe  
\*Jesse Mendez, Youngtown  
\*Walter Bouchard, Citizen Representative  
#Corey Woods, American Lung Association of Arizona  
\*Barbara Sprungl, Salt River Project  
\*Brian O'Donnell, Southwest Gas Corporation  
\*Mark Hajduk, Arizona Public Service Company  
\*Gina Grey, Western States Petroleum Association  
Randi Alcott, Valley Metro  
Dave Berry, Arizona Motor Transport Association  
Jeannette Fish, Maricopa County Farm Bureau  
\*Russell Bowers, Arizona Rock Products Association  
\*Michelle Rill, Greater Phoenix Chamber of Commerce

\*Members neither present nor represented by proxy.  
#Participated via telephone conference call.  
+Participated via video conference call.

OTHERS PRESENT

Lindy Bauer, Maricopa Association of Governments  
Patrisia Navarro, Maricopa Association of Governments  
Ieesuck Jung, Maricopa Association of Governments  
Cathy Arthur, Maricopa Association of Governments  
Taejoo Shin, Maricopa Association of Governments  
Roger Roy, Maricopa Association of Governments  
Ranjith Dandanayakula, Maricopa Association of Governments

Amanda McGennis, Associated General Contractors  
Spencer Kamps for Connie Wilhelm-Garcia, Homebuilders Association of Central Arizona  
Mannie Carpenter, Valley Forward  
Kai Umeda, University of Arizona Cooperative Extension  
Jane McVay for Beverly Chenausky, Arizona Department of Transportation  
Leonard Montenegro for Diane Arnst, Arizona Department of Environmental Quality  
Wienke Tax, Environmental Protection Agency  
Bob Downing for Jo Crumbaker, Maricopa County Air Quality Department  
#Duane Yantorno, Arizona Department of Weights and Measures  
Ed Stillings, Federal Highway Administration  
\*Judi Nelson, Arizona State University  
\*B. Bobby Ramirez, Salt River Pima-Maricopa Indian Community  
\*David Rueckert, Citizen Representative

Mark Young, Town of Queen Creek  
Ramona Simpson, Town of Queen Creek  
Joonwon Joo, Arizona Department of Transportation  
Heather Hodgman, Apache Junction  
Magdalena Jorquez, House of Representatives  
Scott DiBiase, Pinal County  
Shane Kiesow, City of Apache Junction



1. Call to Order

A meeting of the MAG Air Quality Technical Advisory Committee was conducted on November 19, 2007. John Kross, Town of Queen Creek, Chair, called the meeting to order at approximately 1:36 p.m. Antonio DeLaCruz, City of Surprise; Lisa Taraborelli, Town of Gilbert; Jamie McCullough, City of El Mirage; Scott Bouchie, City of Mesa; Cory Woods, American Lung Association of Arizona; Jess Segovia, City of Avondale; Jim Weiss, City of Chandler; and Duane Yantorno, Arizona Department of Weights and Measures attended the meeting via telephone conference call.

2. Call to the Audience

Mr. Kross stated that, according to the MAG public comment process, members of the audience who wish to speak are requested to fill out comment cards, which are available on the tables adjacent to the doorways inside the meeting room. Citizens are asked not to exceed a three minute time period for their comments. Public comment is provided at the beginning of the meeting for nonagenda items and nonaction agenda items. He noted that no public comment cards had been received.

3. Approval of the September 25, 2007 Meeting Minutes

The Committee reviewed the minutes from the September 25, 2007 meeting. Joe Gibbs, City of Phoenix, moved and Dave Berry, Arizona Motor Transport Association, seconded and the motion to approve the September 25, 2007 meeting minutes carried unanimously.

4. Update on the PM-10 Modeling for the Draft MAG 2007 Five Percent Plan for PM-10

Cathy Arthur, Maricopa Association of Governments (MAG), gave an update on the PM-10 Modeling for the Draft MAG 2007 Five Percent Plan for PM-10. She mentioned that the Plan is available for public review and due to the Environmental Protection Agency (EPA) by December 31, 2007. Ms. Arthur stated that a Five Percent Plan for PM-10 is required by the Clean Air Act Section 189(d) for Serious PM-10 nonattainment areas that do not meet the standard by the attainment date which was December 31, 2006 for this region. The Plan is due to the EPA one year later. She indicated that this Plan must show a five percent per year reduction in emissions until the standard is attained at the monitors. She stated that the Plan must also model attainment at the monitors. Ms. Arthur presented a pie chart of the 2007 PM-10 Emissions with Committed Control Measures. She commented that the paved and unpaved roads sections of the pie are a little higher share of the total pie than what has been presented previously and the total number is higher. She added that as the Plan has matured, the numbers have increased. She mentioned that the five percent reduction target is based on the 2007 PM-10 Emissions with Committed Control Measures. Ms. Arthur stated that three years of clean data is needed in order to show attainment at the monitors. She added that attainment cannot be shown next year because of the violations in 2006 and therefore 2010 is needed.

Ms. Arthur presented the five percent reduction targets. She indicated that a 4,822 ton reduction is required in 2008, 9,644 ton reduction in 2009, and 14,466 ton reduction in 2010. Mr Berry inquired if the total tons increased as MAG worked on the modeling. Ms. Arthur replied that the tons increased as the emissions were grown from 2005 to 2007. Mr. Berry asked if 96,445 tons/year for

the 2007 PM-10 Emissions with Committed Control Measures is the number currently in the Plan. Ms. Arthur replied that is correct. Mr. Berry inquired about the starting number. Ms. Arthur replied that in 2005 the number was approximately 84,000 tons/year. She added that growth is expected because of the two year differential. She stated that some of the methodologies have changed and that is the reason the growth shown in the pie chart is higher. She commented that the approach for unpaved road and paved road emissions has been improved. Mr. Berry inquired if the 96,445 tons/year number was used when working with the stakeholders on reductions and control measures. Ms. Arthur responded that the number used was approximately 95,000 tons. She added that the number increased due to improving the methodologies. Mr. Berry asked if the effectiveness of the control measures increased. Ms. Arthur replied yes.

Spencer Kamps, Homebuilders Association of Central Arizona, inquired about a two year plan. Ms. Arthur responded that three years of clean data is required at the monitors to achieve attainment; therefore, there is a minimum of a three year plan. She added that the Plan shows 2008-2010. The Plan covers 2008-2010 because it is being developed in 2007. Mr. Kamps stated that he understood about the three years of clean data and asked about a two year plan that was discussed previously in terms of commitment. Ms. Arthur responded that the concern was the uncertainty of November and December of 2007 since these are typically the worst months due to stagnant conditions. She stated that there is enough credit to add 2010. She mentioned that if violations occur in 2007, the Plan would not have to be updated to add the year 2010.

Larry Person, City of Scottsdale, inquired about the difference between one year of reasonable further progress tonnage and the one year reduction tonnage. Ms. Arthur responded that the reduction tonnages shown refer to the five percent reduction requirements per year that are required of areas that do not attain the standard on time. Reasonable further progress is a requirement of all nonattainment plans, and is a contingency measure requirement above and beyond the control measures. She added that both have to be met in order to satisfy the requirements to have the Plan be approvable. She indicated that the contingency measures have an annual target that does not escalate the same way as the five percent reductions. Mr. Person inquired about the difference. Ms. Arthur replied that the contingency measure credit has to be shown above and beyond the credit for the other committed measures. She noted that the measures have to be different. She added that both the 14,466 tons/year and the 5,030 tons/year are added together. Lindy Bauer, MAG, stated that reasonable further progress is based on what is needed to attain the standard. She indicated that attainment demonstration turned out to be more onerous than the five percent requirement. She mentioned that five percent is a number in the law; therefore, there is a minimum of five percent reduction in emissions per year required. Ms. Bauer stated that at the beginning of this process, five percent could have been enough to attain the standard, more than enough to attain the standard, or not enough to attain the standard. She added that five percent was not enough to attain the standard in this region.

Ms. Arthur presented a pie chart for the 2010 PM-10 Emissions with Committed Control Measures. She added that 2010 is 15,000 tons less than 2007. She stated that the modeling measures and the five percent measures are the same. She added that contingency measures are a different set of measures. Ms. Arthur presented the Reasonable Further Progress. She commented that a linear downward trend needs to be shown to satisfy the requirement for a nonattainment area plan. She demonstrated how the target for contingency measures was determined. Mr. Gibbs inquired if the

5,030 tons/year is the total tons per year from the committed measures or a level to reach attainment. Ms. Arthur replied that it is a requirement in the Clean Air Act and these have to be measures that are above and beyond what was used both in terms of showing the pie chart and modeling attainment. Mr. Gibbs inquired if the 81,356 tons/year were from the committed control measures. Ms. Arthur replied that is correct. Mr. Gibbs asked if the tons could produce a buffer above and beyond attainment. Ms. Arthur responded that the modeling would indicate there is not much of a buffer. She added that there is a big buffer in terms of the five percent. She mentioned that all of that credit is needed in order to model attainment in the Salt River Area. Ms. Arthur indicated that the mix of sources in the Salt River Domain and the reduction in those sources were critical.

Mr. Person inquired about 22 percent of the 2010 emissions coming from the few unpaved roads that are in the region. Ms. Arthur responded that there are a lot of unpaved roads in the region. She added that there are an estimated 1680 miles of unpaved roads with a lot of those being private. Ms. Arthur discussed unpaved road miles with high ADT. She indicated that the total tons per year in the pie chart for 2010 may be smaller but the percentage share for paved and unpaved roads is higher. Ms. Arthur stated that most of the measures that control paved and unpaved roads are listed as contingency measures, therefore, credit is applied toward contingency. She indicated that all of the measures are committed measures and all based on commitments submitted by the State, County and the local jurisdictions. She added that some of the measures are control committed measures and are applied toward the pie chart for five percent reductions. She stated that some of the other committed measures are committed contingency measures. Ms. Arthur commented that EPA allows credit to be taken for the contingency committed measures. She indicated that there are legally binding commitments for all the measures to be implemented. Mannie Carpenter, Valley Forward, inquired if the 96,445 tons verses the 81,356 tons should be equal to the 14,466 tons. Ms. Arthur replied that it is higher since more credit was needed than 14,466 tons in order to model attainment.

Ms. Arthur presented the 25 committed control measures. She commented that research indicated how much benefit was needed in order to show attainment with the models. She added that the measures were reallocated and the compliance was increased in order to make a modeling demonstration. Ms. Arthur presented the committed contingency measures. She stated that these measures are committed measures that were not needed to show attainment through modeling and therefore were included as committed contingency measures. She added that all of the measures are going to be implemented. Mr. Kamps inquired about how measures were decided to be contingency. Ms. Arthur replied that it is based on the modeling. She added that Sierra Research provided the mix of sources in the Salt River Area and indicated the types of reductions needed in order to reach attainment. She mentioned that the compliance levels for those measures were increased to the maximum extent. Ms. Arthur stated that the measures were reordered so that Sierra Research could show attainment through modeling. She mentioned that there are nine committed contingency measures.

Ms. Arthur presented the reductions for quantified measures. She showed the measures needed to meet the five percent requirement and measures needed to meet the contingency requirement for 2008 through 2010. She stated that the conclusion is that both committed control measures and committed contingency measures will meet the Clean Air Act requirements for a 2010 attainment date.

Ms. Arthur presented the reductions in 2010 for committed control measures. She stated that the measures are oriented toward Rule 310, Rule 316, vacant lots, and parking lots. She displayed the reductions in 2010 for contingency measures. Ms. Arthur showed the Reductions in 2010 for all committed measures. She stated that the chart represents both contingency and control measures. She added that all the measures will be implemented. Ms. Arthur discussed the AERMOD Dispersion Model. She stated that the 29 square mile modeling domain modeled two different episodes. She indicated that one episode was windy conditions and the other was stagnant conditions. She mentioned that Sierra Research performed modeling using results of field work conducted for the MAG PM-10 Source Attribution and Deposition Study. She stated that the Technical Support Document (TSD) mentions the data collected and how it confirms the AERMOD modeling parameters and results. She added that monitoring information is also addressed in the TSD.

Ms. Arthur discussed the attainment demonstrated with committed control measures under stagnant conditions. She stated that the Durango, West 43<sup>rd</sup> Avenue and Bethune sites were modeled. She added that the Bethune Elementary monitor exceeded the standard on December 12, 2005. She indicated that Bethune Elementary is the highest of the three monitors in 2010 with a value of 141 ug/m<sup>3</sup> after control measures were applied to the mix of sources around the monitors. Ms. Arthur discussed attainment demonstrated with committed control measures under windy conditions in 2010. She added that the highest value was for West 43<sup>rd</sup> Avenue at 141 ug/m<sup>3</sup>. Mr. Kamps inquired about the highest value at the West 43<sup>rd</sup> Avenue and Durango monitors in the model. Ms. Arthur replied that 233 ug/m<sup>3</sup> was the value that was being modeled at West 43<sup>rd</sup> Avenue. Mr. Kamps inquired about the modeling results for Durango and West 43<sup>rd</sup> Avenue under stagnant conditions. Ms. Arthur responded that the results were in the range of 138 ug/m<sup>3</sup>. Mr. Berry inquired about the PM-10 standard. Ms. Arthur replied that the standard is 150 ug/m<sup>3</sup>. She added that on the windy day, February 15, 2006, only Durango and West 43<sup>rd</sup> Avenue exceeded the standard.

Ms. Arthur stated that Rollback Modeling was conducted for the Higley monitor. She added that a 16 kilometer square area was centered on the Higley monitor. She indicated that the high concentration was 170 ug/m<sup>3</sup> under windy conditions on January 24, 2006. Ms. Arthur stated that two different scenarios were used to show attainment in 2010 with the committed control measures. She mentioned that the first scenario looked at the change of the land use surrounding the Higley monitor. Ms. Arthur added that the second scenario was without land use changes. She noted the comfortable margin. Mr. Gibbs inquired if the two scenarios were to meet regulatory tests. Ms. Arthur replied that most of the time the second scenario is used. It was decided to look at both scenarios because of the changes in land use. Mr. Kross inquired about the metric use for the changes of land use. Ms. Arthur responded that the area near Higley has a timeframe for development. She added that there are target dates for development in the MAG database. She mentioned that there are vacant areas near Higley that are expected to be under development in 2010 and that has been taken into account. She commented that the acreage from those areas will be used to generate the emissions. Ms. Arthur mentioned traffic related PM-10 from developed communities. She added that the increased volumes of traffic were estimated. Ms. Arthur discussed the offset where the traffic PM-10 increased and construction went down.

Ms. Arthur stated that Rollback Modeling was completed for the Greenwood and West Phoenix monitors. She added that modeling was done on these monitors to show that the monitors would attain. She mentioned that during the 2004-2006 period, December 12, 2005 was the only day in which the standard was exceeded at the monitors. She indicated that attainment demonstrated in 2010 with committed control measures at the Greenwood monitor would be with a value of 149 ug/m<sup>3</sup> and the West Phoenix monitor would be at 154 ug/m<sup>3</sup>. She stated that 154 ug/m<sup>3</sup> for the monitor is okay since an exceedance is not until 155 ug/m<sup>3</sup>. Ms. Arthur commented that other requirements addressed in the Five Percent Plan is Reasonable Further Progress, expeditious attainment and the Onroad Mobile Source Emissions Budget. Ms. Arthur stated that the budget for this period is much larger than before since the paved roads and unpaved roads emissions are much higher than the last time the PM-10 modeling was completed. She commented that road construction is included in the budget and the value is much higher than assumed previously. Ms. Arthur noted that the numbers are more realistic.

Amanda McGennis, Associated General Contractors, inquired about the road construction being higher. Ms. Arthur responded that the methodology in the emissions inventory from Maricopa County is different than the base that was used in the 1999 Serious Area Plan. She added that most of the emissions are based on the 2005 emissions inventory from Maricopa County. Ms. McGennis inquired about the percentages being lower. Ms. Arthur responded that the absolute tons per year in 2010 after control measures is what is being examined and not percentages. She indicated that the road construction emissions are decreasing because the compliance rate is increasing for all types of construction. She mentioned that road construction is lower in 2010 than it is in 2007 because of the compliance.

Ms. Arthur stated that the Five Percent Plan is scheduled to have a public hearing on December 12, 2007. She mentioned that the Plan is scheduled for a possible recommendation by the Air Quality Technical Advisory Committee on December 17, 2007. She added that the Regional Council may take action on the Plan on December 19, 2007. The Plan would then be submitted by MAG to ADEQ/EPA on December 21, 2007. Mr. Kamps inquired about the compliance rate for Rule 310. Ms. Arthur responded that the compliance rate in 2008 is 64 percent and it increased to 80 percent in 2010. Mr. Kamps inquired about the nominal increase in compliance. Ms. Arthur replied that in 2008 the compliance rate increases from 51 percent to 64 percent. Mr. Kamps inquired why the measures for dirt roads, unpaved shoulders, and agricultural were listed as contingency measures if, based on Sierra Research, they are major issues around the monitors. Ms. Arthur responded that Sierra Research provided MAG with the mix of sources. She added that Rule 316, vacant lots, Rule 310, and unpaved parking lots emissions turned out to be critical for showing attainment. She indicated that the TSD has tables displaying the mix by sources. She mentioned that the compliance rate was increased in order to show attainment. Ms. Arthur commented on the need to show attainment and using the biggest sources provided by Sierra Research. Mr. Kamps inquired if the sources were regionwide. Ms. Arthur replied that there was an inventory for the Salt River Modeling Domain. She indicated that a percentage was then determined for those sources to be representative for the entire region. She commented that Sierra Research provided the density of sources that they were using and the reductions that were assumed. Mr. Arthur stated that she had to go back and make sure that the regionwide reductions were compatible based on the density provided.

Mr. Kamps commented on the problem in the Salt River Area. Ms. Arthur replied that she could have Bob Dulla from Sierra Research come talk about the AERMOD modeling. She added that there are also tables in the TSD that can provide further explanation. Mr. Kross stated that there will be another staff presentation at the December 17<sup>th</sup> meeting along with discussion of any public comment that has been received. Mr. Kamps inquired if an opportunity to make a recommendation at the December 17<sup>th</sup> meeting will be given in case the Committee has any concerns on the Plan. Ms. Bauer stated that the Committee will be reviewing any comments that were received at the public hearing and the response to comments. She added that the Committee will be requested to make a recommendation on the Plan. She indicated that the draft document has been available for public review since November 13, 2007. She commented on the difficulty of showing the five percent reduction in emissions and attainment at the monitors. Ms. Bauer mentioned that the measures were shifted between committed control measures and committed contingency measures until attainment could be demonstrated. Mr. Kamps inquired if the contingency measures are also commitments. Ms. Bauer responded yes. She added that the contingency measures will also be implemented. Mr. Kamps asked about the difference between a control measure and a contingency measure. Ms. Bauer replied that both the control and contingency measures are committed measures. She added that a contingency measure is above and beyond what is needed to show attainment at the monitors and is above and beyond what is needed for the five percent reductions in emissions. She mentioned that contingency measures are required by the Clean Air Act. Ms. Arthur stated that she could point to the tables in the TSD that show the mix of sources.

Mr. Berry inquired if the onroad mobile source emissions budget is included in the pie chart for 2010. Ms. Arthur replied yes. Mr. Berry inquired if the emissions for 2007 are 96,445 tons per year and 81,356 tons per year in 2010. Ms. Arthur replied that is correct. Mr. Berry asked if 102 tons per day was multiplied by 365 days to derive at the onroad mobile source emissions in 2010. Ms. Arthur responded yes. Mr. Berry asked if the paved and unpaved road categories are part of the onroad mobile source category. Ms. Arthur replied that is correct.

Mr. Kamps asked how far above the goal is the region for the Five Percent Plan. Ms. Arthur replied that the region is about five percent over the goal. She indicated that in 2010, the region is about 5,000 tons over. She added that the region is at 21 percent instead of 15 percent. Mr. Kamps inquired about the 14,466 ton reduction in 2010. Ms. Arthur replied that the 14,466 ton reduction meets the five percent reduction requirement in the Clean Air Act. Wienke Tax, Environmental Protection Agency, commented that the 21 percent is required for attainment at the monitors. Ms. Arthur replied that is correct.

Mr. Person inquired if a paved road produces its own particulates. Ms. Arthur replied no. Mr. Person inquired how paved roads went from 17 percent of the inventory in 2007 to 23 percent in 2010. Ms. Arthur replied that the emissions are going from 96,445 to 81,356 tons a year. She added that the paved road emissions are going up because of the traffic volume. She indicated that the VMT increases about 3 percent a year in the PM-10 nonattainment area. She commented that the number will continue to increase if uncontrolled. Ms. Arthur stated that the unpaved shoulder measure is a control measure that reduces the paved road emissions. Mr. Kamps inquired about the amount of trackout. Ms. Arthur replied that the trackout emissions are a little over half. She added that the emission rates for trackout is much higher than normal paved roads.

Mr. Berry inquired about the total amount of tons reduced combining the control and contingency measures. Ms. Arthur replied that the total reduction in 2010 is about 29,000 tons. Mr. Berry suggested that the presentation should have a headline that indicates that a 29,000 ton reduction is being modeled. He indicated the substantial commitment of the region. Mr. Kamps commented on the reductions for quantified measures. Ms. Arthur replied that the control measures are 20,000 tons and the contingency measures are 9,000 tons. She added that both the contingency measures and the control measures are committed measures and will be implemented. Mr. Kamps inquired why credit is not being taken for the contingency measures if they are going to be implemented. Ms. Arthur responded that credit is being taken for those measures. She added that the 9,000 tons is credited toward contingency and 20,000 tons is credited toward five percent. She indicated that all requirements must be met. She commented that the mix of measures presented will achieve all the requirements. She mentioned that the modeling controlled the mix of measures.

Mr. Kross commented on the contingency measures. Mr. Berry commented on achieving the reductions at the monitors and the reductions that are needed for the Plan. Mr. Berry inquired about adding the contingency measures to the pie chart for 2010. Ms. Arthur stated that a chart can be generated to reflect the percentage.

5. Status Report on the Draft MAG 2007 Five Percent Plan for PM-10

Ms. Bauer stated that a public hearing is scheduled to be conducted on the draft Plan on December 12, 2007 in the Cholla Room at 5:30 p.m. She added that the draft document is available on the third floor for public review. She mentioned that the draft document is also located on the MAG website. She indicated that a qualifier will be added to the website since the document is a PDF file that is not searchable. Ms. Bauer stated that the document is not searchable since some of the items in the Plan were not available electronically. She encouraged the Committee to use the table of contents in the main plan in order to see where certain items were placed in the chapter. She indicated that the Committee could also use the table of contents in the TSD. She commented that the Committee is welcomed to the MAG library located on the 3<sup>rd</sup> floor of the building to review a hard copy of the Plan.

6. Call for Future Agenda Items

Ms. Tax requested that the Gila River Indian Community come and give the presentation that was scheduled in a previous meeting. She also requested that the agendas be provided electronically. Ms. Bauer indicated that the agendas are posted to the MAG website. Ms. Tax requested to be removed from the mail list since she would be able to obtain the agenda on the MAG website and did not want more paper. Mr. Berry commented on the greenhouse gases and global warming.

Mr. Kross announced that the next meeting of the Committee has been tentatively rescheduled for December 17, 2007 at 1:30 p.m. With no further comments, the meeting was adjourned.

# **MAG 2007 FIVE PERCENT PLAN FOR PM-10 FOR THE MARICOPA COUNTY NONATTAINMENT AREA**

## **EXECUTIVE SUMMARY**





## **MAG 2007 FIVE PERCENT PLAN FOR PM-10 EXECUTIVE SUMMARY**

Within the Maricopa County nonattainment area, the National Ambient Air Quality Standard has not yet been attained for PM-10 particulate pollution. The Maricopa Association of Governments was designated by the Governor of Arizona in 1978 and recertified by the Arizona Legislature in 1992 to serve as the Regional Air Quality Planning Agency to develop plans to address air pollution problems.

Based upon the 1990 Clean Air Act Amendments, the Maricopa County nonattainment area was initially classified as Moderate for PM-10 particulate pollution. However, on May 10, 1996, the nonattainment area was reclassified to Serious due to failure to attain the particulate standard by December 31, 1994. The Serious Area reclassification was effective on June 10, 1996.

The Revised MAG 1999 Serious Area Particulate Plan for PM-10 for the Maricopa County Nonattainment Area was submitted to the Environmental Protection Agency (EPA) in February 2000. On July 25, 2002, EPA published a notice of final approval for the plan. Collectively, the plan contained approximately seventy-seven committed control measures from the State and local governments. The plan demonstrated attainment of the PM-10 standard by December 31, 2006.

In order to be in attainment, the region needed three years of clean data at the monitors for 2004, 2005, and 2006. However, there were numerous exceedances of the 24-hour standard in 2005 and 2006. On June 6, 2007, EPA published a final notice with its findings that the Maricopa County nonattainment area had failed to attain the PM-10 standard by the federal deadline of December 31, 2006.

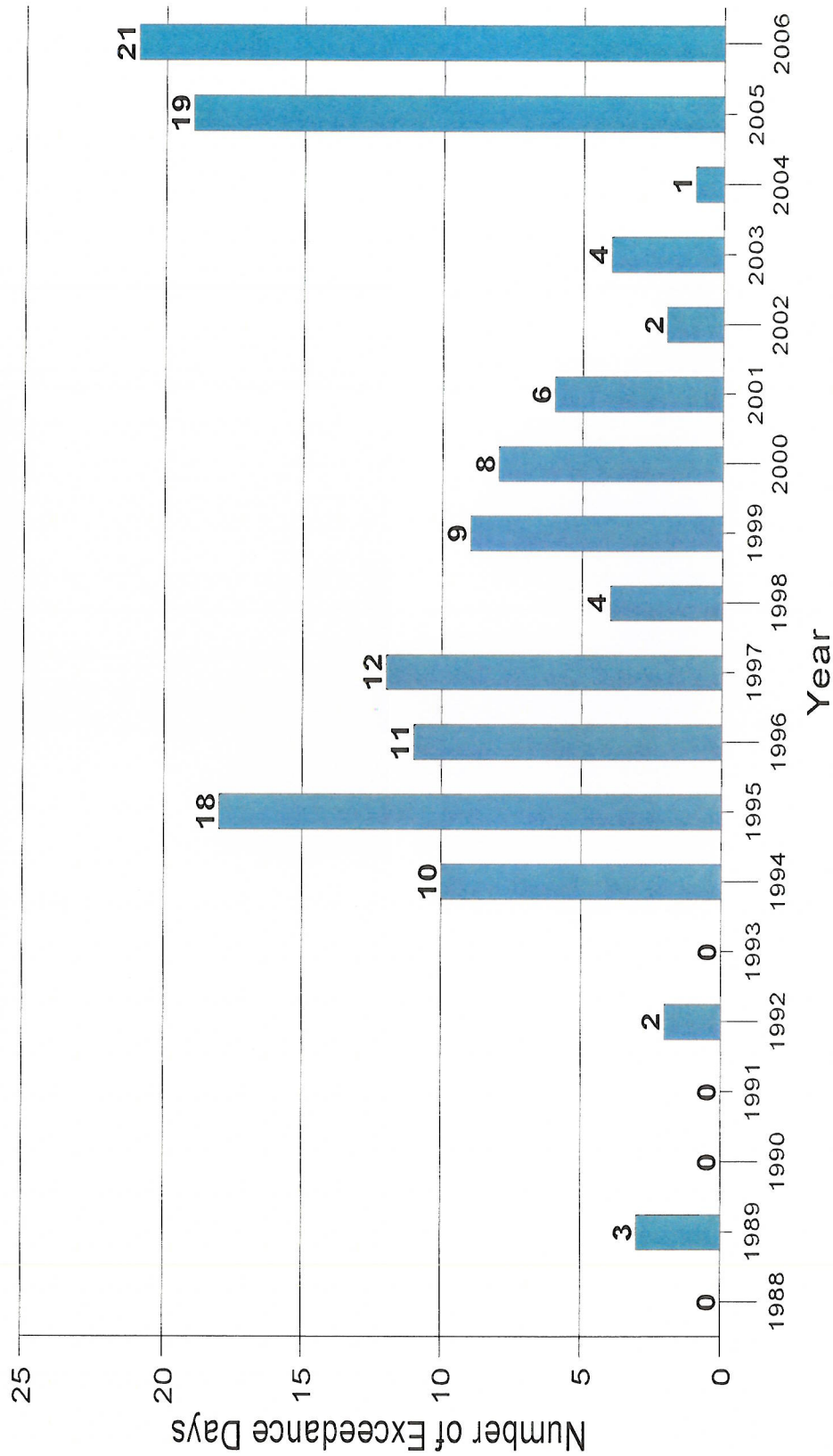
In accordance with Section 189 (d) of the Clean Air Act, the Five Percent Plan for PM-10 is due to the Environmental Protection Agency by December 31, 2007. The plan is required to reduce PM-10 emissions by at least five percent per year until the standard is attained as measured by the monitors. The Clean Air Act specifies that the plan must be based upon the most recent emissions inventory for the area and also include a modeling demonstration of attainment.

Particulate air pollution can occur throughout the year. The formation of PM-10 particulate pollution is dependent upon several factors. Among these factors are stagnant masses, severe temperature inversions in the winter, high winds in the summer, and fine, silty soils characteristic of desert locations. In the Maricopa County nonattainment area, particulate matter (PM-10) concentrations are elevated during various seasons of the year and under different weather conditions. The variability is due to the diverse composition of PM-10 and the sources contributing to this diversity.

The trend in PM-10 levels for the Maricopa County nonattainment area is presented in Figure ES-1. The 24-hour PM-10 standard is 150 micrograms per cubic meter. In 2004,

**FIGURE ES-1**

**NUMBER OF 24-HOUR PM-10 EXCEEDANCE DAYS**



**Note:** The Arizona Department of Environmental Quality began flagging natural and exceptional events in 2004. Exceedances that have been approved or are pending approval by EPA as natural or exceptional events have been removed from this chart.

**Sources:** 1988 - 1997 - Revised MAG 1999 Serious Area Particulate Plan for PM-10 for the Maricopa County Nonattainment Area, February 2000.  
 1998 - 2006 - EPA Air Quality System; Maricopa County Network Reviews; ADEQ Air Quality Reports.



there was one exceedance day of the 24-hour standard. However, in 2005 there were 19 exceedance days and in 2006 there were 21 exceedance days of the 24-hour standard. Figure ES-2 indicates the monitors where exceedances occurred. The violations of the standard at the Bethune Elementary School, Durango Complex, and West 43<sup>rd</sup> Avenue monitors caused the region to fail to attain the PM-10 standard by the December 31, 2006 attainment date.

A rigorous planning effort was conducted to prepare the MAG 2007 Five Percent Plan for PM-10. An extensive Preliminary Draft Comprehensive List of Measures was compiled for evaluation. The MAG Analysis of Particulate Control Measure Cost Effectiveness report provided an evaluation of forty-six control measures. For each measure, the following information was prepared: narrative description; suggested implementing entity; estimate of the cost of implementation; estimate of the PM-10 emission reduction potential; estimate of the cost effectiveness (\$/ton of PM-10 reduced); and discussion of implementation issues and comments. In preparing the information for the analysis, measures from other PM-10 Serious Areas were reviewed and contacts were established. Relevant dust control literature reviews were performed to obtain data on measured emission reductions. Contacts were established with local agencies and businesses in Maricopa County to determine the cost of labor, equipment, materials, etc.

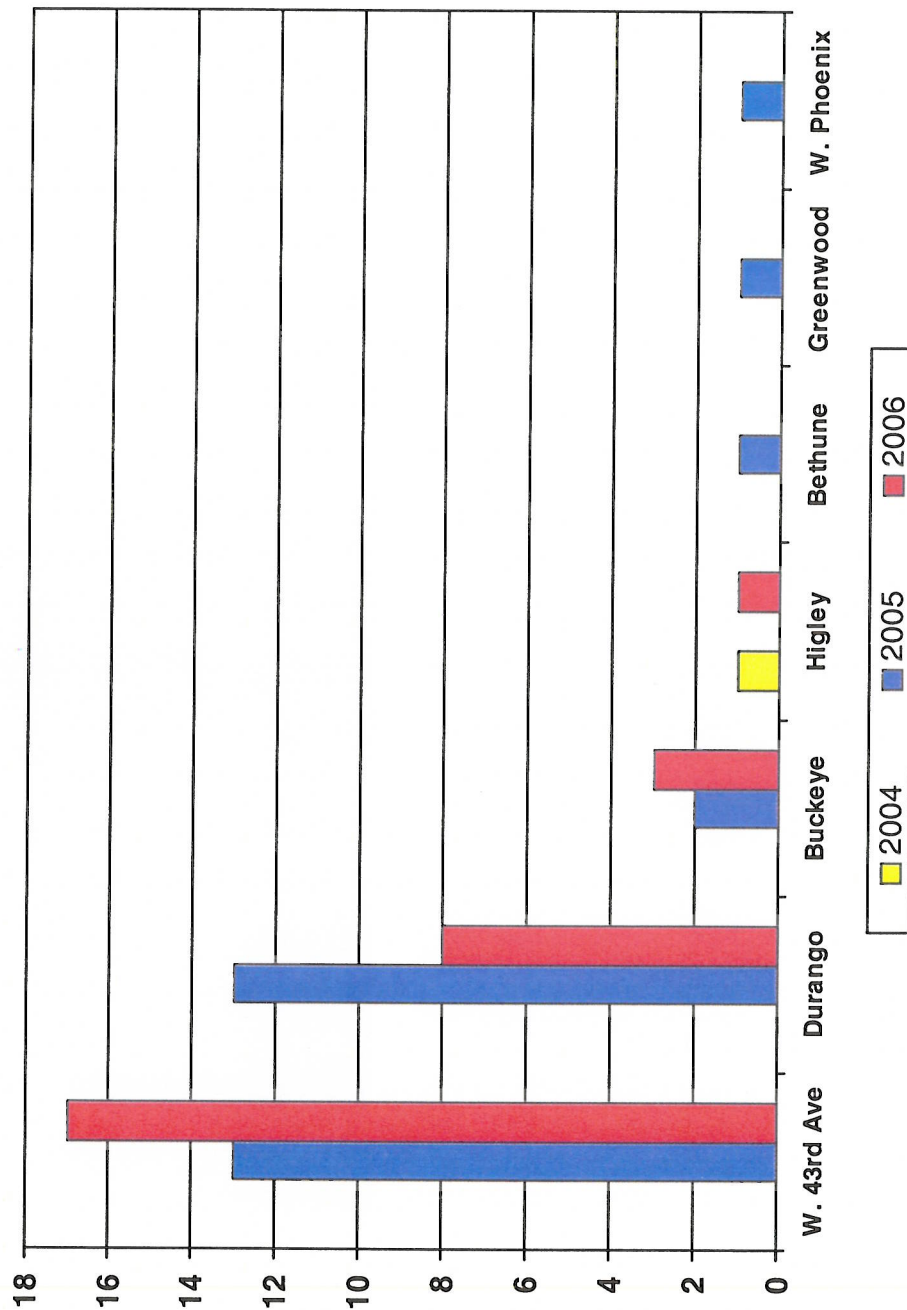
The MAG PM-10 Source Attribution and Deposition Study was another major study which provided information for the evaluation of control measures. The study was designed to identify the sources of emissions contributing to violations of the PM-10 standard at monitors in the nonattainment area during stagnant conditions and characterize the deposition of PM-10 particles emitted by these sources. The MAG consultants for the study were T&B Systems and Sierra Research. The key questions addressed in the study were:

1. Where are the specific source areas and/or sources in the Salt River region that contribute to the particulate matter (PM) loading at the Durango Complex and West 43<sup>rd</sup> monitoring sites?
2. To obtain useful results from models such as AERMOD, can the regional particle size distribution be characterized on an area basis (i.e., is there an area of uniformity that can be generalized?)
3. What are the causes of heavy PM loading during the morning hours at the Durango and West 43<sup>rd</sup> monitors? Are the diurnal variations of PM-10 and peaks due to reentrainment of paved road dust, or due to other activities in the surrounding areas that are coincident with traffic peaks?

The approach used for the study involved assessing existing meteorological and PM data; selecting monitoring tools; establishing a sampling plan; defining routes for mobile sampling; determining locations of meteorological data collection; selecting locations to investigate dispersion of roadway sources; conducting sampling in two phases;

FIGURE ES-2

EXCEEDANCES OF THE 24-HOUR PM-10 STANDARD AT MONITORS IN MARICOPA COUNTY



- Notes: 1. Exceedances are based on data from the EPA Air Quality System (AQS). Exceedances due to natural events have been removed from the AQS by EPA.
2. The exceedance at the Bethune, Greenwood, and W. Phoenix monitors occurred on 12/12/05.



coordinating with local agencies for related data; and performing daily review of collected data to identify insights, opportunities and problems. The monitoring tools for the study included: a particle lidar; mobile monitoring; DustTrak optical PM-10 monitors; DustTrak optical PM-2.5 monitors; an aerodynamic particle size analyzer; MiniVol filter based samplers; a sodar; and a SCAMPER vehicle. The SCAMPER (System for Continuous Aerosol Monitoring of Particulate Emissions from Roadways) vehicle was used to measure PM-10 from paved roads. From November 15, 2006 through December 14, 2006, extensive measurements were taken in the Salt River area using state-of-the-art technologies.

In general, the study identified a number of sources of PM-10 in the Salt River area. They included: trackout; dragout from unpaved or poorly maintained paved roads or parking lots; unpaved shoulders; unpaved roads; open burning; agriculture; and vehicle activity on unpaved parking areas and vacant lots. Preliminary results from the study were used in the evaluation of control measures and the final results were used in the modeling attainment demonstration.

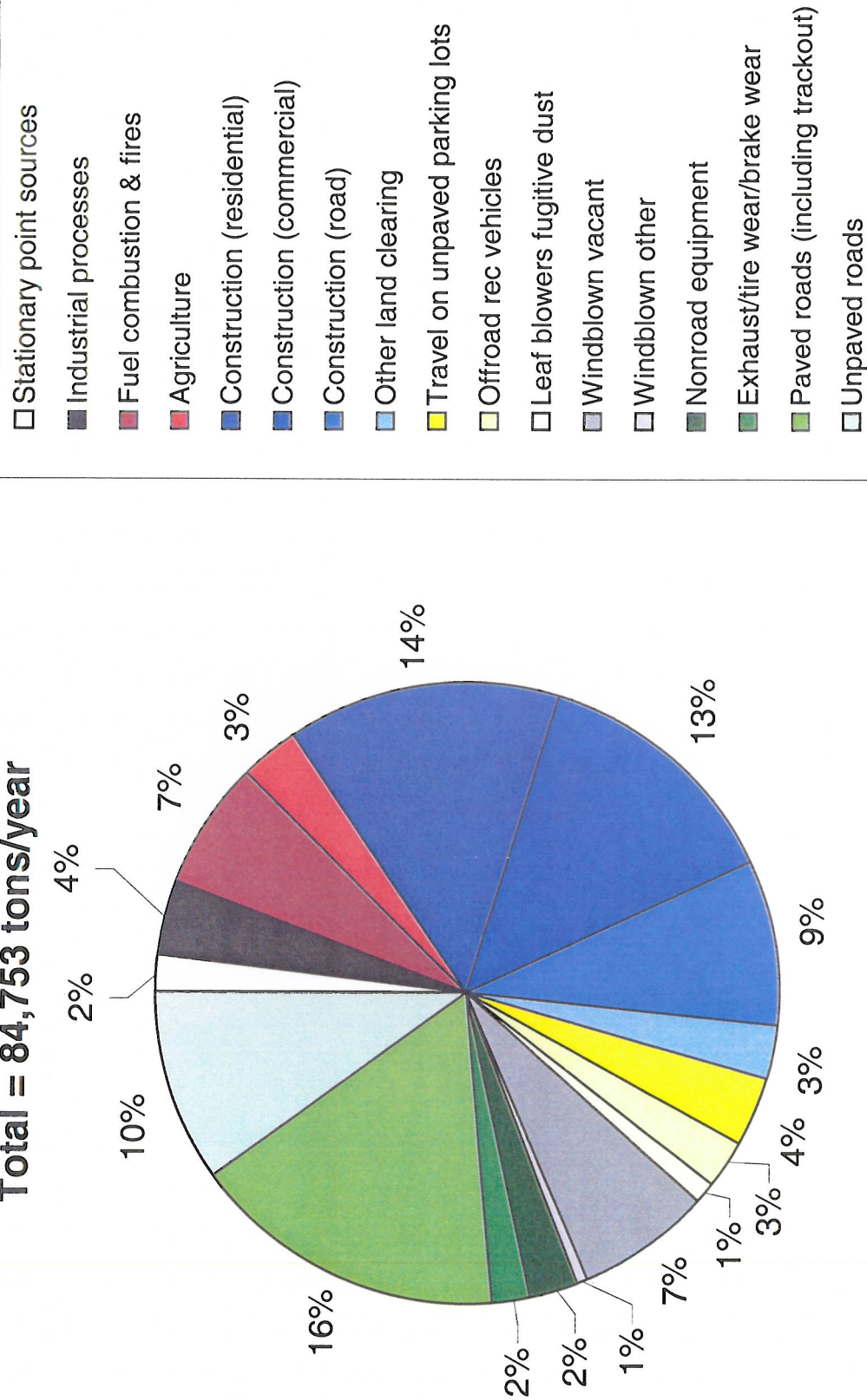
Based upon the Maricopa County Air Quality Department 2005 Periodic Emissions Inventory for PM-10 for the Maricopa County Nonattainment Area, the primary sources of PM-10 are: Paved Roads (including trackout) 16 percent; Construction (residential) 14 percent; Construction (commercial) 13 percent; Unpaved Roads 10 percent; Construction (road) 9 percent; Fuel Combustion and Fires (industrial natural gas and fuel oil, commercial/institutional natural gas and fuel oil, and residential natural gas, wood and fuel oil) 7 percent; and Windblown Vacant (vacant lots) 7 percent. The sources are depicted in Figure ES-3.

The emissions in the 2005 Periodic Emissions Inventory for PM-10 were projected to 2007, 2008, 2009, and 2010. The total controlled emissions in the 2007 projected inventory were used to calculate the five percent reduction target in emissions. For 2007, the total controlled emissions in the PM-10 nonattainment area are 96,445 tons per year (see Figure ES-4). This number was multiplied by five percent to determine the target PM-10 emissions reduction of 4,822 tons per year. To meet this annual target, the controlled 2008 emissions must be at least 4,822 tons less than the base case 2008 emissions; the controlled 2009 emissions must be at least 9,644 tons less than the 2009 base case emissions; and the controlled 2010 emissions must be at least 14,466 tons less than the 2010 base case emissions.

In order to reduce PM-10, a broad range of commitments to implement measures were received from the State, Maricopa County, and the twenty-three local governments in the PM-10 nonattainment area. Collectively, the MAG 2007 Five Percent Plan for PM-10 includes fifty-three committed control measures. The measures used for numeric credit to meet the annual five percent reduction target in PM-10 emissions and the modeling attainment demonstration for 2010 are included in Figure ES-5. Key measures include: Dust Managers/Coordinators at Earthmoving Sites; Increase Rule 310 and 316 Inspections; Extensive Dust Control Training; Conduct Nighttime and Weekend

FIGURE ES-3

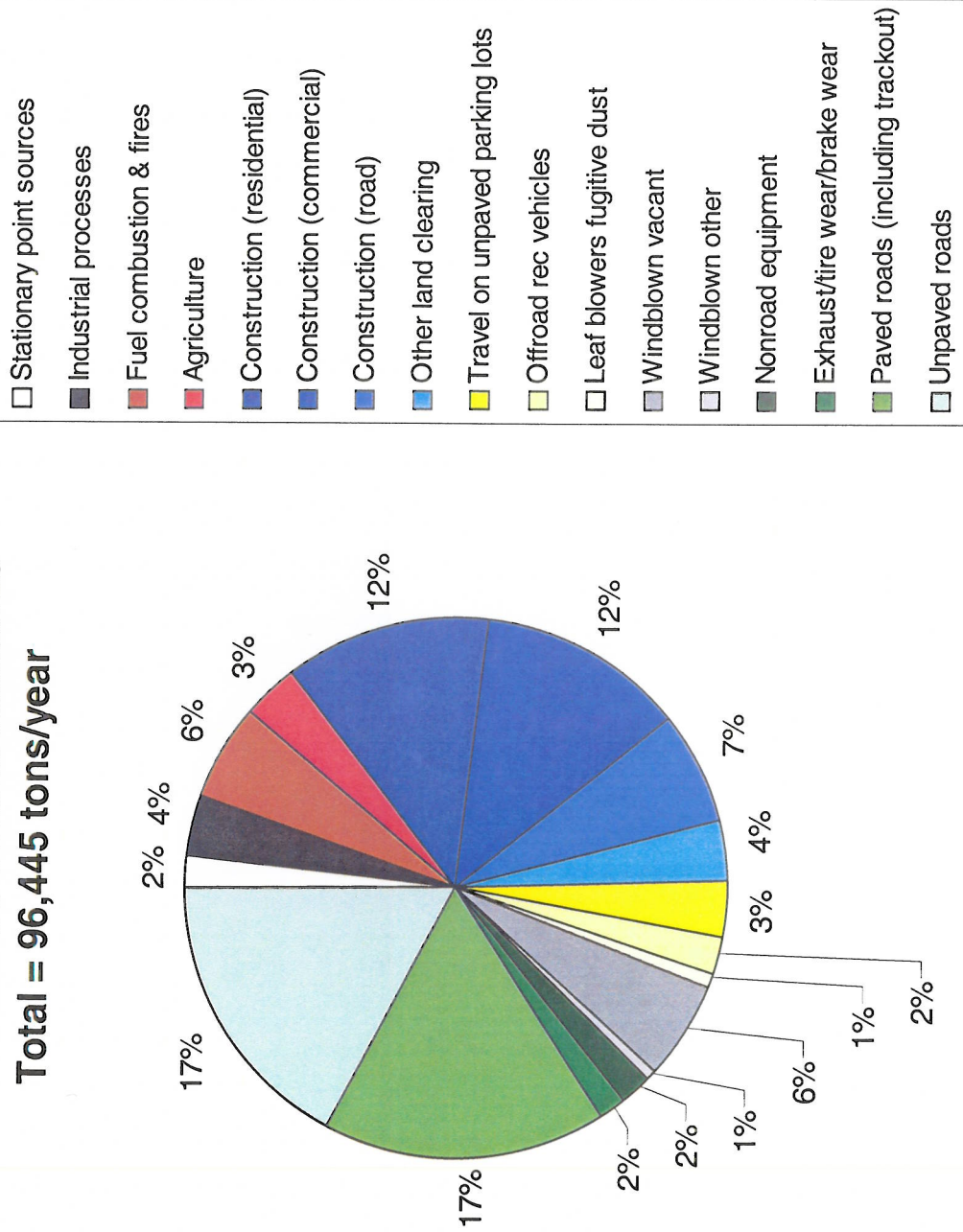
**2005 PM-10 Emissions  
in the PM-10 Nonattainment Area  
Total = 84,753 tons/year**



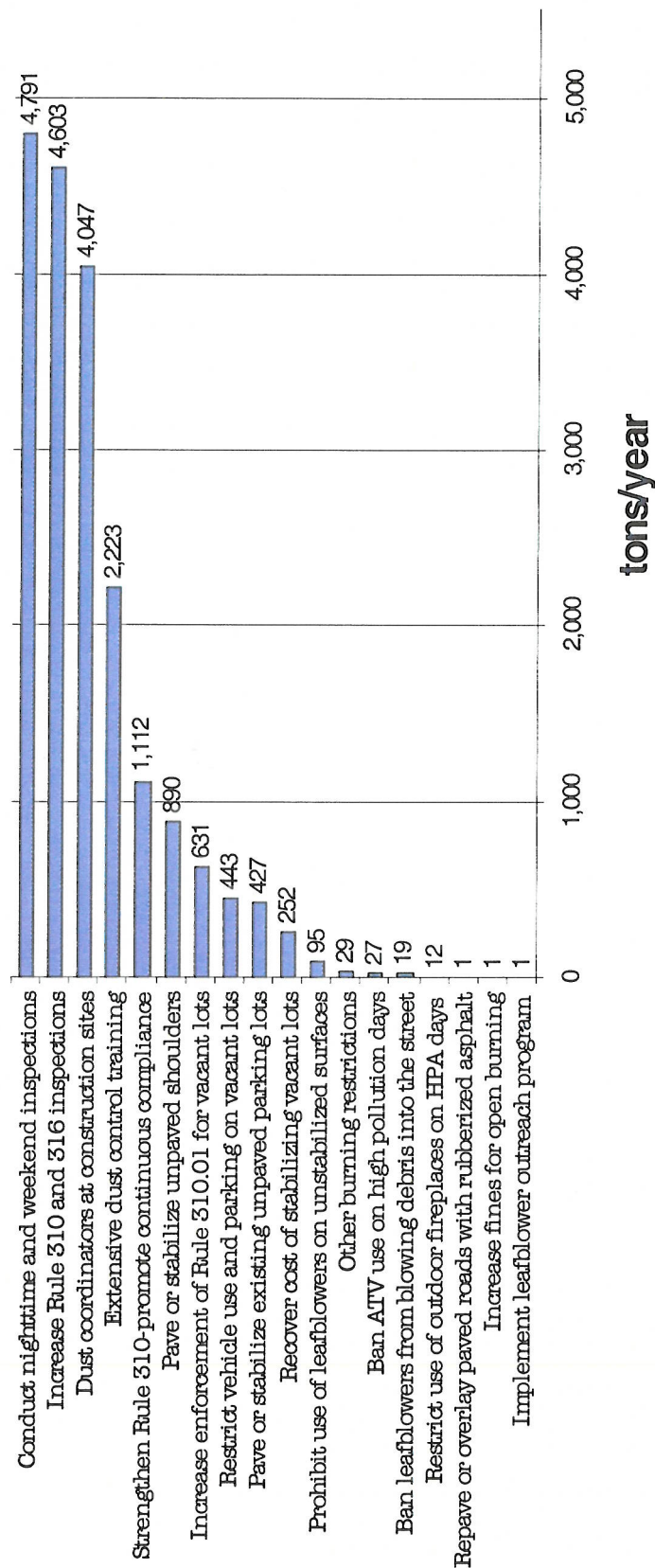
Source: 2005 Periodic Emissions Inventory for the Maricopa County, Arizona Nonattainment Area. Maricopa County Air Quality Department. May 2007.



**Figure ES-4**  
**2007 PM-10 Emissions**  
**with Committed Control Measures**  
**Total = 96,445 tons/year**



**Figure ES-5**  
**Reductions in 2010 for Committed Control Measures**  
**in the Five Percent Plan for PM-10**





Inspections; Strengthen Rule 310 to Promote Continuous Compliance; Pave or Stabilize Dirt Shoulders; Pave or Stabilize Unpaved Parking Lots; Restrict Vehicle Use on Vacant Lots; Strengthen Rule 310.01 for Vacant Lots; and Recover the Cost of Stabilizing Vacant Lots.

In accordance with the Clean Air Act, the MAG 2007 Five Percent Plan for PM-10 also contains contingency measures sufficient to provide emissions reductions equivalent to one year of reasonable further progress which is 4,824 tons per year. The reasonable further progress requirements for Serious PM-10 nonattainment areas are included in Section 189(c) of the Clean Air Act. Collectively, the impact of the contingency measures is a reduction in PM-10 emissions of approximately 5,125 tons in 2008, 7,121 tons in 2009, and 9,073 tons in 2010 versus the contingency target of 4,824 tons per year.

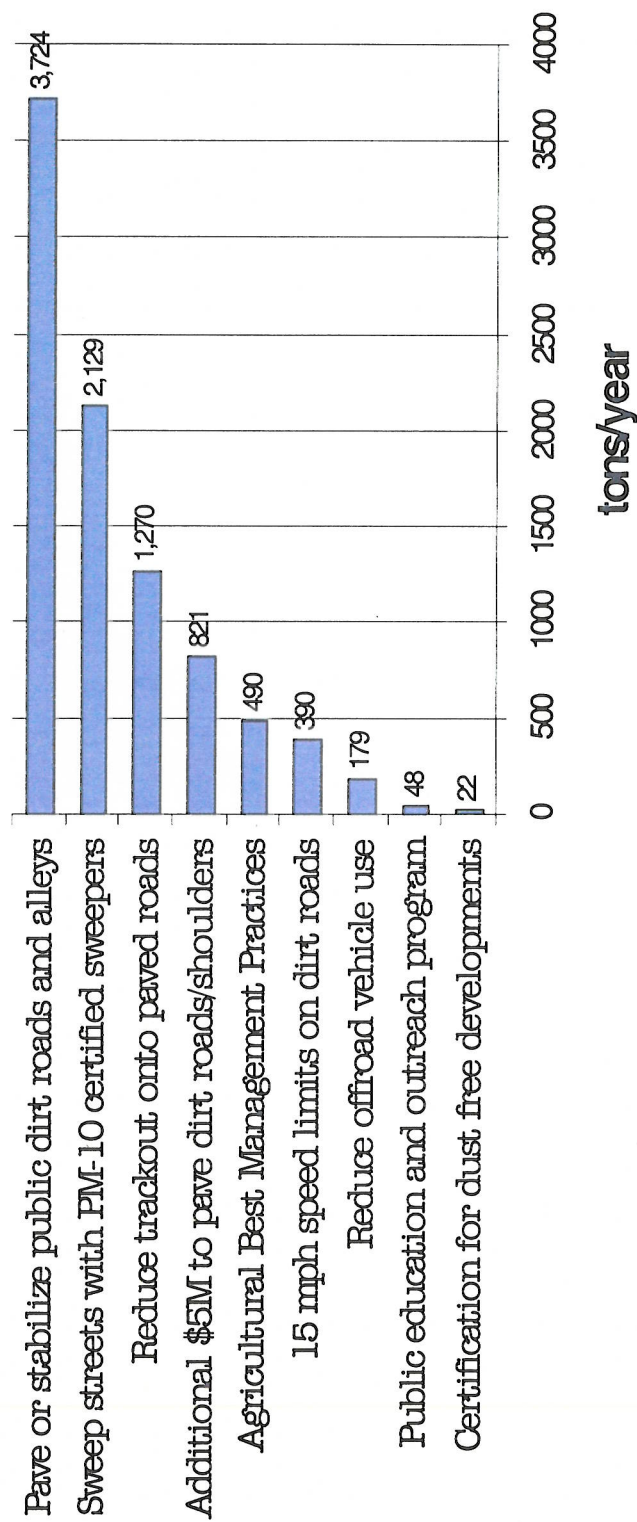
The contingency measures are committed measures in the adopted plan which achieve emissions reductions beyond those measures relied upon for progress (five percent reductions, reasonable further progress, milestones) and attainment of the standard. The key contingency measures are: Pave or Stabilize Dirt Roads and Alleys; Sweep with PM-10 Certified Street Sweepers; Reduce Trackout Onto Paved Roads; Additional Five Million Dollars in FY 2007 MAG Federal Funds for Paving Dirt Roads and Shoulders; Agricultural Best Management Practices; 15 Mile Per Hour Speed Limits on Dirt Roads; Reduce Offroad Vehicle Use; Certification for Dust Free Developments; and Public Education and Outreach Program. Figure ES-6 shows the impacts of the contingency measures in 2010.

The committed measures in the MAG 2007 Five Percent Plan for PM-10 used for numeric credit reduce PM-10 emissions by at least five percent per year through 2010 and provide for contingency measures equivalent to one year of reasonable further progress. Table ES-1 summarizes the total impacts of the measures versus the target reductions required. Based upon the air quality modeling in the plan, the committed measures used for numeric credit also result in attainment of the standard as expeditiously as practicable which is 2010.

The total 2010 PM-10 emissions with committed control measures are 81,974 tons (see Figure ES-7). The total 2010 PM-10 emissions with committed control and contingency measures are 72,901 tons (see Figure ES-8). Together, the committed control measures and committed contingency measures reduce base case PM-10 emissions by 28.2 percent by 2010.

For conformity analyses, the onroad mobile source emissions budget includes reentrained dust from travel on paved roads; vehicular exhaust, tire wear, and brake wear; travel on unpaved roads; and road construction. In 2010, the PM-10 emissions from these four source categories total 102.6 metric tons per day. This represents the onroad mobile source emissions budget for conformity.

**Figure ES-6**  
**Reductions in 2010 for Committed Contingency Measures**  
**in the Five Percent Plan for PM-10**



## **TABLE ES-1**

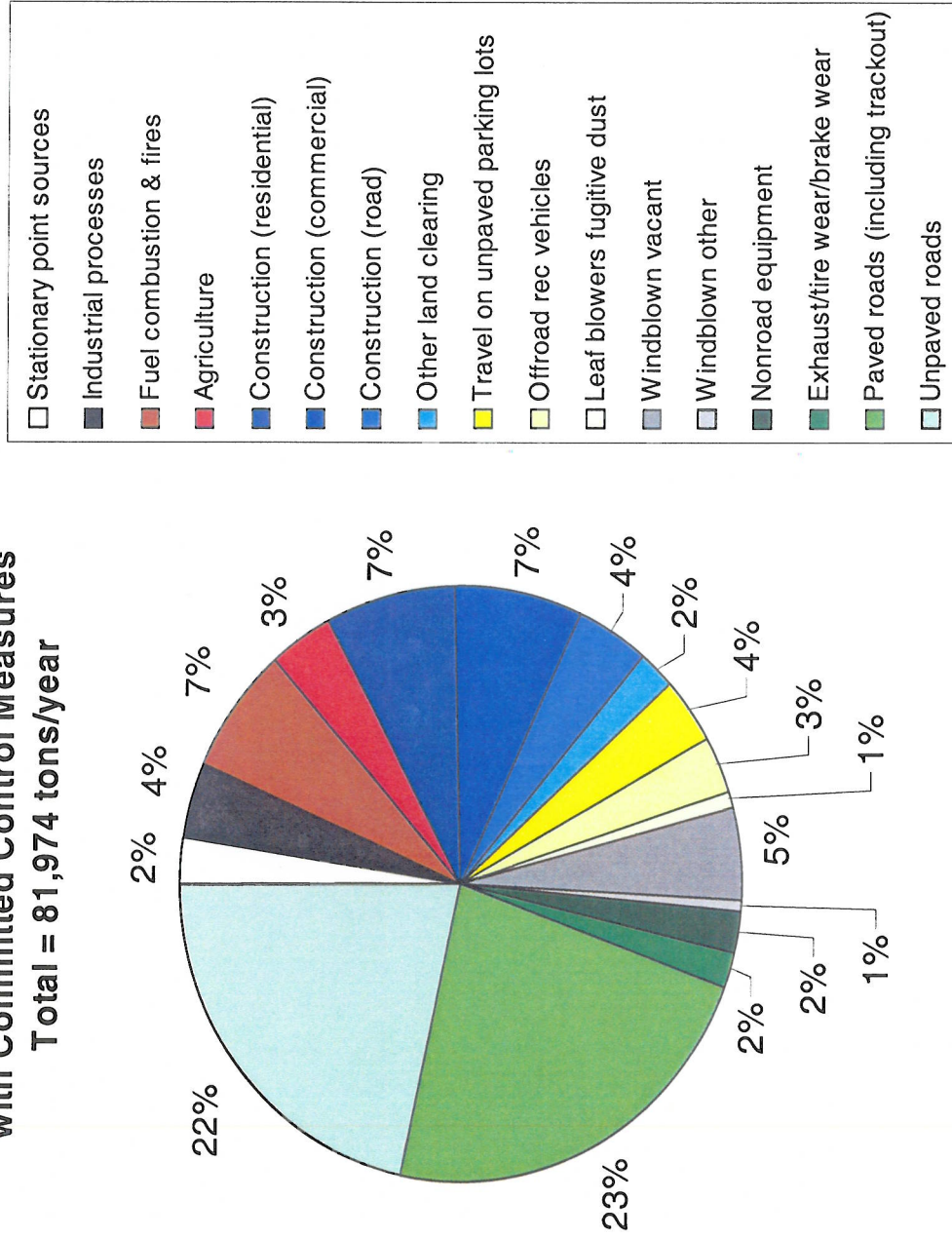
### **EMISSIONS REDUCTIONS FOR COMMITTED MEASURES QUANTIFIED TO MEET THE FIVE PERCENT REDUCTION REQUIREMENT**

- 6,687 tons vs. 4,822 ton target reduction in 2008
- 15,248 tons vs. 9,644 ton target reduction in 2009
- 19,603 tons vs. 14,466 ton target reduction in 2010

### **EMISSIONS REDUCTIONS FOR COMMITTED MEASURES QUANTIFIED TO MEET THE CONTINGENCY MEASURE REQUIREMENT**

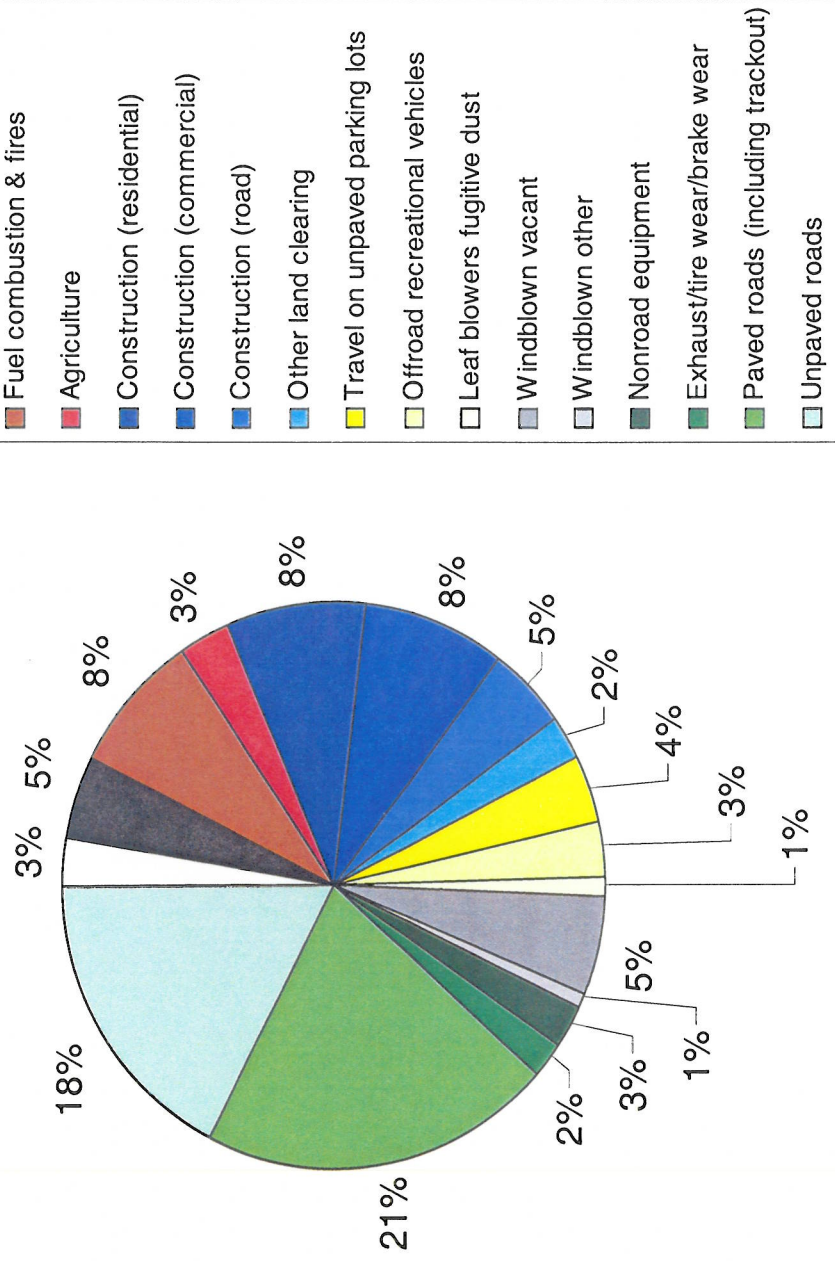
- 5,125 tons vs. 4,824 ton target reduction for 2008
- 7,121 tons vs. 4,824 ton target reduction for 2009
- 9,073 tons vs. 4,824 ton target reduction for 2010

**Figure ES-7**  
**2010 PM-10 Emissions**  
**with Committed Control Measures**  
**Total = 81,974 tons/year**





**Figure ES-8**  
**2010 PM-10 Emissions**  
**with Committed Control and Contingency Measures**  
**Total = 72,901 tons/year**  
**(28.2% reduction)**



**TENTATIVE MEETING SCHEDULE FOR THE  
MAG AIR QUALITY TECHNICAL ADVISORY COMMITTEE**

**JANUARY - DECEMBER 2008**

**Saguaro Conference Room**

Thursday, January 24, 2008 - 1:30 p.m.

Thursday, February 28, 2008 - 1:30 p.m.

Thursday, March 27, 2008 - 1:30 p.m.

Thursday, April 24, 2008 - 1:30 p.m.

TUESDAY, May 27, 2008 - 1:30 p.m.

Thursday, June 26, 2008 - 1:30 p.m.

Thursday, July 24, 2008 - 1:30 p.m.

Thursday, August 28, 2008 - 1:30 p.m.      **IF NECESSARY**

Thursday, September 25, 2008 - 1:30 p.m.

Thursday, October 30, 2008 - 1:30 p.m.

Thursday, December 11, 2008 - 1:30 p.m.      **IF NECESSARY**

**Note:** This schedule is subject to change. Flexibility is needed to meet federal Clean Air Act mandates and changes in guidance from the Environmental Protection Agency.